## Message

From: TU, LYNDSEY [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=1BBD1651E4434BD78233A6BC426D56F1-TU, LYNDSEY]

**Sent**: 4/10/2017 5:30:26 PM

To: Takaba, Richard R [richard.takaba@doh.hawaii.gov]; Whittier, Robert [Robert.Whittier@doh.hawaii.gov];

steven.chang@doh.hawaii.gov; dthomas@soest.hawaii.edu

Subject: RE: Preliminary Analysis of Red Hill GW Gradient

Attachments: BWS\_MWmap\_04APR17.jpg; BWS\_MWSolicitation\_MAR17.pdf

## Hi All,

Would Thursday also work for everyone? Due to a cold going around and some anticipated sick leave, it's our new preferred day. EPA is free anytime in the AM Hawaii time. If Thursday does not work we will stick with Tuesday.

Also I wanted to make sure you all were aware of the well locations that BWS is proposing to install. I've included the documentation we received from the Navy as an FYI, I think we should also discuss the value of these locations in our conversation.

Thanks

Lyndsey Tu Underground Storage Tanks Program Land Division, U.S. EPA Pacific Southwest Tu.Lyndsey@epa.gov | 415-972-3269

From: Takaba, Richard R [mailto:richard.takaba@doh.hawaii.gov]

Sent: Friday, April 07, 2017 7:48 PM

To: Whittier, Robert <Robert.Whittier@doh.hawaii.gov>; TU, LYNDSEY <Tu.Lyndsey@epa.gov>; Pallarino, Bob

<Pallarino.Bob@epa.gov>; Linder, Steven <Linder.Steven@epa.gov>; steven.chang@doh.hawaii.gov;

dthomas@soest.hawaii.edu; Ronald Chinn <ron.chinn@innovex.net>

Subject: RE: Preliminary Analysis of Red Hill GW Gradient

Me too thank you

Richard Takaba DOH UST

From: Whittier, Robert

Sent: Friday, April 07, 2017 8:23 AM

**To:** TU, LYNDSEY <<u>Tu.Lyndsey@epa.gov</u>>; Pallarino, Bob <<u>Pallarino.Bob@epa.gov</u>>; Linder, Steven <<u>Linder.Steven@epa.gov</u>>; Takaba, Richard R <<u>richard.takaba@doh.hawaii.gov</u>>; Chang, Steven Y <<u>steven.chang@doh.hawaii.gov</u>>; <u>dthomas@soest.hawaii.edu</u>; Ronald Chinn <<u>ron.chinn@innovex.net</u>>

Subject: Re: Preliminary Analysis of Red Hill GW Gradient

Good Morning Lindsey,

I am open both Tuesday and Wednesday morning.

Bob W.

From: TU, LYNDSEY <Tu.Lyndsey@epa.gov>

Sent: Friday, April 7, 2017 8:04 AM

To: Pallarino, Bob; Linder, Steven; Whittier, Robert; Takaba, Richard R; Chang, Steven Y; <a href="mailto:dthomas@soest.hawaii.edu">dthomas@soest.hawaii.edu</a>; <a href="mailto:dthomas@soest.hawaii.edu">dthoma

Ronald Chinn

Subject: RE: Preliminary Analysis of Red Hill GW Gradient

Hi All,

Thanks to Bob W. and Don for your work on the GW gradient documents, they're very useful. We would like to have a call to discuss this next week if possible. Can you all get back to me about windows availability on Tuesday April 11<sup>th</sup>? We can make a meeting work as early as you are able in Hawaii, but ideally sometime around 9am Hawaii time. We also have limited availability on Wednesday morning if Tuesday absolutely does not work.

Once I hear back from everyone I'll send out a meeting invitation.

Best,

Lyndsey Tu Underground Storage Tanks Program Land Division, U.S. EPA Pacific Southwest Tu.Lyndsey@epa.gov | 415-972-3269

From: Pallarino, Bob

Sent: Friday, April 07, 2017 7:52 AM

To: TU, LYNDSEY < Tu.Lyndsey@epa.gov >; Linder, Steven < Linder.Steven@epa.gov >

Subject: FW: Preliminary Analysis of Red Hill GW Gradient

FYI

Bob Pallarino
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From: Whittier, Robert [mailto:Robert.Whittier@doh.hawaii.gov]

Sent: Thursday, April 06, 2017 6:41 PM

To: steven.chang@doh.hawaii.gov; Takaba, Richard R <richard.takaba@doh.hawaii.gov>; Pallarino, Bob

<Pallarino.Bob@epa.gov>; Ronald Chinn <ron.chinn@innovex.net>

**Cc:** Donald Thomas < <a href="mailto:dthomas@soest.hawaii.edu">dthomas@soest.hawaii.edu</a> <a href="mailto:subject">Subject: Preliminary Analysis of Red Hill GW Gradient</a>

Hi All,

I took the liberty of evaluating the Synoptic Water Level data provided the USGS and doing a first pass analysis. Handed it off to Don Thomas for his review and comment, and here is what we came up with. Basically if the write up doesn't make it clear it seems that depending on drilling wells, measuring water levels, and throwing it all into a model does not have high probability of being able to answer the critical question of where groundwater beneath the Red Hill USTs flow from or to. It also seems from recent discussions that placing wells in Halawa Valley is becoming a difficult process.

So take a look at the groundwater gradient summary and will be happy to discuss.

Thanks, Bob W.